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Evaluation of education involves assessing the effectiveness of schools and trying to determine how best to improve them. Since evaluation often deals only with the question of effectiveness, performance indicators in education are designed to make evaluation more complete. They are a set of statistical models which relate several important variables to objectives of the schools. The objectives considered may be student achievement, noncognitive functioning, or social functioning. These objectives are analyzed for statistical relationships with such variables as demographic characteristics, student characteristics, and elements in the school organization. Steps in developing such models include stating the educational objectives, selecting and developing measures for each objective and variable, collecting data from each school district, and analyzing the data to determine the best mix of variables related to each objective. By looking at the relationships between variables and objectives, descriptive, predictive, and optimization information is generated. Although absolute answers are not provided, the instruments should help school officials decide on allocation of funds, school organization, teaching methods, and instructional material best suited for achieving a school's objectives. (TT)

PERFORMANCE INDICATORS IN EDUCATION

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PERFORMANCE INDICATORS IN EDUCATION

Evaluation of education involves two questions. The first is: "How effective are our schools?" It is here that the process often ends. But the second question is just as important. It is: "What can be done to improve our schools?"

The Bureau of School Programs Evaluation is developing sets of performance indicators which may move evaluation of education in New York State toward answering the second question.

Performance indicators may be thought of as a set of models which relate important variables to the objectives of the schools. Student performance of various kinds make up a major set of educational objectives. Statistical models allow us to explore possible relationships between student performance and other variables such as surrounding conditions, student characteristics, and school processes.

Let's look at each of these sets of variables. What kinds of surrounding conditions are related to various types of student performance? The kinds of things which suggest themselves here are population density of the community, tax rate for support of the schools and various indices of community type.

Student characteristics which may need to be considered include sex, ethnic group, abilities, and measures of past achievement. The New York State Pupil Evaluation Program provides much of the information in this category.

Elements of school processes which might be examined more closely are: organization of the school, expenditures for various aspects of the educational operation, curriculum, and variables related to teacher

characteristics and preparation. Much of this information is provided by the New York State Basic Educational Data System and related information systems.

These three sets of variables are then related to the specific objectives under consideration. It should be pointed out that variables which are related to one objective may not be related to another objective. Those objectives of the school which encompass student performance might be grouped in this way:

1. Student achievement. Such changes are measured most easily by standardized achievement tests. These are the kinds of measures we are dealing with most frequently at the present time.
2. Noncognitive functioning. This would include such things as the motivation of the student and his attitudes. For example, one objective of a school system might be not only to provide students with the skills to make it possible for them to earn a living, but also to provide them with the motivation which makes them <u>want</u> to earn a living.
3. Social functioning. This might include the student's relations with other people or his ability to take his place as a constructive member of his community.

By looking at the relationships between pupil, community and school variables and objectives such as these, we can get an estimate of what might be expected of a school under a certain set of circumstances and, beyond this, what might be expected of the school if circumstances change.

How is such a model developed? First, objectives of the educational system must be stated. This is both a state and local responsibility. Then, measures must be selected or developed for each objective. When this has been done, data can be collected from each school district.

Much the same procedure is used in developing information about the predictor variables. Variables related to a specific objective are identified. Measures of these variables are selected or developed. Data are collected from each school district. When all of these steps have been taken, the data are analyzed to determine the best "mix" of variables related to each objective.

How will such a model be used? The model based on statewide data can be applied locally to permit each individual school system to interpret its own data related to each of its objectives. This may provide three kinds of information:

1. Descriptive information--information about past and present status of the school system and relationships among variables.
2. Predictive information--information about what is likely to happen under a given set of circumstances, either the present circumstances or those that may occur in the future. These circumstances may be within the control of school officials (change in expenditures, change in organization) or outside their control (changes in the community, changes in student population).
3. Optimization information--information about what patterns of relationships between variables are most likely to optimize the schools objectives. For example, what would be required to raise the achievement level of students by a given amount?

This last is obviously a very demanding requirement and one which has not been achieved by any means.

Let me describe some of our tentative findings as we develop this type of model. Of major importance is the contribution to student achievement of factors outside the immediate control of the school, factors such as the socioeconomic status of the student and the student's I.Q. This doesn't mean that the variables related to school processes aren't important. On the contrary, it emphasizes how important they are if the schools are to influence the achievement of students in any significant way. And it may help us understand the dimensions of the task the schools are undertaking. Our job is to develop the means of defining these relationships so that it is possible to see what changes will tend to increase the influence of school processes as much as possible.

Another tentative finding is that we seem better able to identify factors related to achievement in the language area than in the arithmetic area. Non-school factors and socioeconomic status, for example, seem more important to language development than to the development of arithmetic skills. This appears to have meaning for curriculum development as well as for the evaluation of school effectiveness.

What we are hoping to develop, then, is a set of instruments for helping school officials decide on the allocation of funds, the patterns of school organization, the teaching methods, and the instructional materials best suited for achieving the school's objectives.

Some cautions should be thrown in at this point. We do not have, at our present state of knowledge, techniques for providing objective answers to questions of educational policy. Whether we can develop them to a usable point in the future remains to be seen. Whatever

kinds of devices are developed, it appears clear that they will not give absolute answers. They will provide statements of what is most likely to happen under certain circumstances or what is most likely to be the best avenue for achieving a given objective.

Setting educational policy and making decisions relating to this policy require keen perception and sound judgment in school officials. Performance Indicators in Education will not replace these human qualities but will serve as tools to sharpen the perception and judgment which are so necessary for our schools to fulfill their promise.